

Sans titre

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COMET C/2001 A2 (LINEAR)

O. Schuetz, E. Jehin, X. Bonfils, H. Boehnhardt, K. Brooks, A. Delsanti, O. Hainaut, E. Jourdeuil, P. Leisy, M. Sterzik, and E. Wenderoth, European Southern Observatory (ESO); J. Helbert, DLR, Berlin; G. Garradd, Loomberah, N.S.W.; F. Marchis, University of California at Berkeley; B. Stecklum, TLS-Tautenburg; and G. Tozzi, Osservatorio Astrofisico di Arcetri, report that an intensive high-resolution monitoring of the inner coma on June 16-21 indicates that the comet continues to fragment. The images obtained at ESO (La Silla) in the thermal infrared with the 3.6-m telescope (+ TIMMI2, N band), and in the optical region with the 3.5-m New Technology Telescope (+ EMMI, R filter) and the ESO/MPG 2.2-m telescope (+ WFI, R filter), show faint companions drifting away from the principal nucleus (B) in an approximately antisolar direction. Analysis by Z. Sekanina, Jet Propulsion Laboratory, shows that all the observations can be satisfied by three fragments, D, E, and F. The observed offsets (separation from B and position angle), the fragment identification, and the instruments used are as follows: June 16.422 UT, 2".8, 212 deg, D+E+F (TIMMI2); 17.447, 4".6, 215 deg, E+F (TIMMI2); 18.409, 6".7, 222 deg, F (WFI); 18.449, 6".5, 219 deg, F (TIMMI2); 18.456, 6".6, 222 deg, F (EMMI); 19.433, 4".7, 222 deg, D (WFI); 19.433, 7".2, 222 deg, E and/or F (WFI); 19.449, 5".0, 223 deg, D (EMMI); 19.449, 8".5, 223 deg, E and/or F (EMMI); 20.433, 6".1, 231 deg, D (WFI); 20.433, 8".3, 222 deg, E (WFI); 21.437, 11".0, 223 deg, E (TIMMI2); 21.442, 7".2, 231 deg, D (EMMI); and 21.442, 10".6, 222 deg, E (EMMI). The analysis implies that fragment D separated from B on June 3.5 +/- 1.8 with a differential nongravitational deceleration of 17 units (of 10^{-5} the solar attraction) and with an initial velocity of 1.0 +/- 0.1 m/s (approximately normal to the orbit plane); fragment E on June 9.5 +/- 0.7 with a deceleration of 53 units and a velocity of 0.3 +/- 0.1 m/s; and fragment F on June 11.3 +/- 0.5 with a deceleration of 102 units and a velocity of 0.8 +/- 0.2 m/s. These breakup events apparently triggered another major outburst (cf. IAUC 7630), reported by visual observers to have peaked on June 12.

Total-visual-magnitude and coma-diameter estimates: July 1.05 UT, 4.4, 20' (R. Haver, Frasso Sabino, Italy, 10x50 binoculars); 1.71, 4.5, 16' (S. Yoshida, Ibaraki, Japan, 10x24 binoculars); 2.69, 4.7, 10' (M. Mattiazzo, Wallaroo, S. Australia, 7x50 binoculars; moonlight); 3.08, 5.0, 18' (A. Giambersio, Potenza, Italy, 16x70 binoculars); 3.95, 4.5, 12' (D. V. Fedotov, Kharkov, Ukraine, 7x50 binoculars); 4.75, 4.8, 20' (Y. Nagai, Yamanashi, Japan, 12x50 binoculars; moonlight).

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